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Journal of the Society of Arts.

FRIDAY, MAY 28, 1858.

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ARTISTIC COPYRIGHT.

A Petition to the House of Commons, praying for an Amendment of the Law of Artistic Copyright, is now lying for signature at the House of the Society of Arts. Members and others interested in the subject are requested to call in the course of the ensuing week, to sign the Petition.

WRITING CASE.

The Council regret that, after a careful examination by the Committee specially appointed to report on the merits of the sixty-two writing cases sent in to compete for the Special Prize of Twenty Pounds and the Society's Silver Medal, there are none which show sufficient merit to justify the Council in awarding the Prize. The Council have decided to invite further competition, and will shortly be prepared to announce the conditions.

LOCAL BOARDS—PREVIOUS EXAMINATION.

Fifty-seven Local Boards of Examiners have been formed. Returns of the Candidates who have passed the Previous Examination have been received, as follows :—

Louth	4
Wigan	6
West Hartlepool	3
Leeds (Christian Institute), No. 1.	14
Northowram	1
Portsmouth	2
Warminster	1
Banbury	2
Macclesfield	83
Newcastle-on-Tyne	3
Lymington	1
West Brompton	4
Leeds, No. 2.	10
Wakefield	4
Pembroke Dock	4
Ipswich	6
London Mechanics' Institution	8
Manchester Mechanics' Institution	32
Selby	9
Bradford	18
Halifax, No. 1.	15
Salisbury	1
Liverpool	35
Lockwood	1
Halifax (Working Men's College), No. 2.	21
York	7
Berkhampstead	19
Bristol	11
London Domestic Mission	1
Royal Polytechnic Institution	28
Birmingham, No. 1, (Messrs. Chance's Reading Room)	2
Sheerness	1
Sheffield (People's College), No. 1.	15
Sheffield (Mechanics' Institution), No. 2	3
Blackburn	5
Crosby Hall (London) Evening Classes	25
Windsor and Eton	10
Greenwich	1
Institutional Association of Lancashire and Cheshire	100
Lewes	2
Brighton	3

The total number of Candidates who have been examined by the Local Boards, is 1,108.

The number of Candidates whose names have been returned as desiring to attend the Final Examinations, is 337.

The Final Examinations, under the supervision of the several Local Boards, commenced on Monday last, and will conclude on Saturday next. A large number of the papers worked by the Candidates have already been received, and the awards will be made by the Society's Central Board of Examiners at the earliest possible date.

EXAMINATIONS.—PRIZES FOR 1858.

The following Prizes are offered to the Candidates, viz. :—

One First Prize of £5, and one Second Prize of £3 in each of the 26 subdivisions of the subjects of Examination.

No Prize in any subject will be awarded to a Candidate who does not obtain a Certificate of the first class therein.

The Prizes will be given in money or in books, at the option of the Candidate.

The following Prizes are offered to the Local Boards, viz. :—

To the Local Board whose Candidates obtaining Certificates of the first class (not fewer than ten) bear the largest proportion to its whole number of Candidates. —One Prize of £10.

To the Local Board whose Candidates obtaining Certificates of the first class (not fewer than eight) bear the largest proportion to its whole number of Candidates. —One Prize of £8.

To the Local Board whose Candidates obtaining Certificates of the first class (not fewer than six) bear the largest proportion to its whole number of Candidates. —One Prize of £6.

To the Local Board whose Candidates obtaining Certificates of the first class (not fewer than four) bear the largest proportion to its whole number of Candidates. —One Prize of £4.

No Local Board can receive more than one of these Prizes.

These sums may be applied by the Local Boards to the payment of the expenses of the Examination, or otherwise, as the Board may deem best, for the promotion of the objects for which it was instituted.

SURGICAL INSTRUMENT COMMITTEE.

The Council have appointed a Committee to investigate the subject of Mechanical Contrivances applied to Medicine and Surgery—to promote improvement in their production—to determine and make known desiderata—to examine and report on the merit of apparatus submitted; and to recommend rewards for successful invention.

The Committee consists of the following gentlemen, with power to recommend other names to the Council:—

*Henry W. Acland, M.D., F.R.S.
Neil Arnott, M.D.
Thomas John Ashton, M.R.C.S.
*C. Metcalfe Babington, F.R.C.P.
A. Whyte Barclay, M.D.
Lionel S. Beale, M.B. Lond.
Thomas Bell, F.R.C.S., F.R.S.
*Charles Brooke, F.R.S.
Frank Buckland, M.A., M.R.C.S.
George Budd, M.D., F.R.S.
George Busk, F.R.C.S., F.R.S.
*Samuel Cartwright, Junr., M.R.C.S.
*Thomas King Chambers, M.D.
*William D. Chowne, M.D.
*Wm. Coulson, F.R.C.S.
*George Critchett, F.R.C.S.
*T. Blizard Curling, F.R.C.S., F.R.S.
J. E. Erichsen, F.R.C.S.
Conway Evans, M.D.
*William Farr, M.D.
*William Field.
John France, F.R.C.S.
John B. Fletcher.
Robert Temple Frere, F.R.C.P.
George Gulliver, F.R.S.
*Francis Seymour Haden, F.R.C.S.
Mitchell Henry, F.R.C.S.
William Aug. Hillman, F.R.C.S.
William Jenner, M.D.
George Johnson, M.D.
Henry Charles Johnson, F.R.C.S.
W. Senhouse Kirkes, M.D.
Edwin Lankester, M.D., F.R.S.
*Henry Letheby, M.B. Lond.
James Luke, F.R.C.S.
John Marshall, F.R.C.S., F.R.S.
William Allen Miller, M.D.
Campbell De Morgan, F.R.C.S.
*Robert Nairne, M.D.
Richard Partridge, F.R.S., F.R.C.S.
Alfred Poland, F.R.C.S.
Richard Quain, M.D.
Francis Ramsbotham, M.D.
Theophilus Redwood.
G. Owen Rees, M.D., F.R.S.
Samuel J. A. Salter, M.B.
Henry Savage, M.D.
Francis Sibson, M.D., F.R.S.
John Simon, F.R.C.S.
Alfred Smee, F.R.C.S., F.R.S.
John Snow, M.D.
*Edward Solly, F.R.S.
Samuel Solly, F.R.C.S., F.R.S.
Charles Spooner.
Peter Squire.
*John Stenhouse, LL.D., F.R.S.
*Richard William Tamplin, F.R.C.S.
Alfred Swaine Taylor, M.D.
Theophilus Thompson, M.D.
John Tomes, F.R.S.
Joseph Toynbee, F.R.C.S., F.R.S.
James Reeves Traer, M.R.C.S.
Prof. Tyndall.
Charles Vasey, L.F.B.S. Glas.
*Thomas Watson, M.D.
Charles West, M.D.
*A. W. Williamson, M.D.
W. H. Winchester, F.R.C.S.

* Members of the Society of Arts.

On Tuesday last, the 25th inst., this Committee held their first meeting, at which twenty-eight members were present. Mr. C. Wentworth Dilke, the Chairman of the Council, opened the proceedings by explaining at considerable length the objects of the Council in appointing the Committee.

Mr. Dilke, in the course of his address, observed that the present Committee was one of a series established to watch and report on the continued progress of every Art represented in the Exhibition of 1851, and that its present reorganisation had especial reference to a more complete illustration of the subject in any future exhibition. The price of surgical instruments in this country was, he had been informed, considerable, in comparison with the productions of France, and though it might certainly be said that English instruments had an advantage in temper and quality, the question was, whether this advantage was commensurate with the great difference of price. The Council, in nominating this Committee, had endeavoured to include persons eminent in every branch of the profession, so as to afford material for the formation of special sub-Committees, which should each consist of at least three or four gentlemen. It appeared to the Council that the first especial duty of these sub-Committees would be to make a complete classification of the instruments and appliances at present in use in each branch of the profession, so as completely to illustrate the subject, and serve as data for future proceedings. The Council, in inviting the Committee to act, had thought it advisable to reprint and circulate amongst the members the epitome which had been prepared by a member of the Committee for the use of the staff of the Exhibition of 1851, which, however, the Council were fully aware, was imperfect, and merely suggestive. The Council were of opinion that the publication of a classified list would be in itself of great importance, and would tend to the more perfect representation of this branch of industry in any future Exhibition. It would also be the duty of the sub-Committees to examine apparatus submitted for approval, and report to the General Committee upon their merits. The sub-Committees would also have to determine desiderata, and to suggest to the General Committee the offer of rewards for successful inventions, or simplifications of existing instruments. It would now be the duty of the Committee to elect their chairman, and such vice-chairmen as they might deem necessary.

The Committee then unanimously elected James Luke, Esq., Chairman, Dr. Watson, Dr. Budd, Henry Charles Johnson, Esq., and Richard Partridge, Esq., Deputy-Chairmen, and Francis Seymour Haden, Esq., and Mitchell Henry, Esq., Reporters. The Committee then took into consideration the appointment of Sub-Committees

On General Medicine.
General Surgery.
Dental Surgery.
Obstetric Surgery.
Ophthalmic Surgery.
Orthopædic Surgery.
Philosophical Apparatus applied to the investigation and treatment of Disease.
Veterinary Surgery.

TWENTY-FOURTH ORDINARY MEETING.

Wednesday, May 26, 1858.

The Twenty-Fourth Ordinary Meeting of the One Hundred and Fourth Session was held on Wednesday, the 26th inst., Henry Thomas Hope, Esq., in the chair.

The following Candidates were balloted for and duly elected members of the Society :—

Binns, Richard William
Branthwaite, Harrison
Brown, William
De Mora, J. J.
Snowball, Joseph
Stickney, John, Jun.
Wilson, William
White, Henry
Wood, Nicholas.

The Paper read was—

ON THE INFLUENCE EXERCISED ON CERAMIC MANUFACTURES BY THE LATE MR. HERBERT MINTON.

By M. Digby Wyatt.

In an insular country of limited extent, such as England, with an already large and rapidly increasing population, it will be probably conceded that the man who creates any new industrial resources must be a national benefactor. His contributions to the common stock of prosperity are no less essential to the well-being and consequent tranquillity of the state than are those levied by the course of public exigencies from the highest political functionaries, or the most philanthropic lawgivers. The wisdom, energy, courage, and devotion of the great soldier or sailor may defend a nation's prosperity, but it is only by an unintermitting exercise of the very same qualities on the part of its chief industrial organisers, that the prosperity which it is the privilege of the brave defenders of a country to protect, can be made to exist. This being the case, it is to be regretted that while in Great Britain national dignities and honours are ungrudgingly lavished on other celebrities, no laurels should be reserved for those whose abilities and energies in many instances have given bread to thousands who, but for them, would have gone to swell the squalid ranks of misery, if not of crime.

What the State leaves undone in this matter, it is the duty of the intelligent middle classes to supply, and hence it is that I feel justified in asking your indulgent attention this evening to my endeavours to depict the successful labours of the late Mr. Herbert Minton, whom it would be altogether unjust, as I conceive, to exclude from the honoured list of national benefactors.

There is probably no one here present unacquainted with the name of Minton, or ignorant of the branch of industry he did so much to elevate; few, however, are, I imagine, conversant with the exact nature of what was effected through his instrumentality. All products introduced into general use, and supplied through thousands of different retail channels, become merged, in the popular idea, into one common stock; and while all may observe a progress more or less rapid in any special branch of industry, scarcely any pause to note the details of the manufacture, or to trace the originators of the successive modifications they can scarcely fail to observe. In order to lead you to an approximate estimate only of what the nature of the improvements effected during Mr. Minton's career really was, I must ask you to cast a rapid glance over the history of British Ceramic Manufacture previous to the year 1788, in which the late Mr. Minton's father established those works at Stoke-upon-Trent, in Staffordshire, which have become so celebrated under the energetic management of his son and successors.

The early stages of ceramic manufacture in England were marked by no great originality. In the production and ornament of porcelainous or semi-transparent wares, very shortly after the year 1700 great excellence was attained on the Continent, at Meissen, Moscow, St. Cloud, Höchst, Doccia, and Chantilly; and although some evidence exists of the contemporaneous establishment in this country of the manufactories at Bow and Chelsea, a corresponding degree of excellence does not appear to have been attained in them at so early a date. It was during the period between the years 1750 and 1765, that the Chelsea factory, with its soft and semivitreous paste, most successfully rivalled the great establishments of Vincennes (subsequently Sèvres), and Dresden. George II. was a liberal supporter of it, causing workmen, artists, models, and even materials to be procured from Saxony and Brunswick. In 1763 a magnificent service, the cost of which was no less than £1,200, was made for the King and Queen, under the superintendence of a foreigner, a M. Spremont, who directed the works for many years. On his retirement, about 1765, the manufacture was abandoned in London, and the principal workmen betook themselves to Derby, where an establishment had been set up in the year 1750, by a Mr. Dewsbury. In the following year a rival sprang into notice at Worcester, in the person of Dr. Wall, with whom a triumphant course of ingenious originality may be said to have been inaugurated in England. His principal invention is believed to have been that of printing on biscuit.

Up to the year 1768 no porcelain capable of bearing an extraordinary heat, and so hard as to resist scratching with a steel point, had been made in this country, for want of those materials which had, prior to that date, been discovered on the Continent, in Saxony, at Aue, by Böttcher, and in France, at St. Yrieix, by Madame Darnet. In the above-mentioned year the discovery of Cornish kaolin and pegmatite, by Mr. Cookworthy, of Plymouth, introduced a new element into the manufacture, and hard china was speedily made in considerable quantities at Worcester. From this parent establishment several others branched off, the most important probably being the Caughley Works, near Broseley, Shropshire, which were directed by John Turner, who joined them from Worcester, and who is stated to have discovered the art of printing in blue on china in 1780. It was under John Turner that Mr. Herbert Minton's father was brought up.

Such was the general aspect of the porcelain trade in England prior to 1788, and it remains to trace what had been done in the opaque earthen and stone wares. From a very early period pottery was made in Britain, and the art never appears to have been altogether lost. In the reign of Elizabeth, some dexterity was acquired, and specimens are extant evidently made of slip or clay brought into a fluid condition and cast into moulds. The Staffordshire "tigs" or drinking cups certainly abounded in her reign, and much rude pottery was subsequently produced from local plastic clay, occasionally ornamented with pipe clay patterns, and glazed with a coarse lead glaze. A great improvement on this common pottery was effected, about the end of the seventeenth century, by the brothers Elers, natives of Nuremburg, who discovered, at Bradwell, near Burslem, some fine red clay, with which they made a rude but close-grained Samian ware, which they ornamented with raised patterns, formed in copper stamps and glazed with a salt glaze, which they are believed to have been the first to introduce into England. The secrets of these Germans were discovered through a stratagem, by a man of the name of Astbury, and the foreigners were speedily ejected through local jealousies. To Astbury's son is accorded the merit of the discovery of the use of calcined flint in combination with clay, in the year 1720, and from that period commenced the manufacture of cream-coloured, buff, and dingy-white, stoneware—destined to speedily assume an altogether different and superior aspect under the master handling of the celebrated Josiah Wedgwood, who was born in 1730, and who died in the year 1795. He first set up in business in a very humble way at Burslem, in Staffordshire, in the year 1759, and the value and speedy popularity of the inventions he made within a few years of that date, supplied him, in 1771, with the means of founding his celebrated establishment at Etruria. The wares of Wedgwood are so well and generally known that it is unnecessary to dwell upon them. It may suffice to remark that they were produced in great abundance and largely exported previous to the year 1788.

In spite, however, of various ingenious efforts, which cannot now be even enumerated, little that was good was produced in any considerable quantity previous to the close of the eighteenth century, excepting by the establishments of Bow, Chelsea, Derby, Worcester, Caughley, Leeds, Wedgwood and Spode, the latter through his judicious use of calcined bones and felspar, obtaining an enormous business in common but very good earthenware.

We shall now proceed to trace the development of the commercial house which the late Mr. Herbert Minton mainly raised into its present great importance. His father, Mr. Thomas Minton, who was a native of Shropshire, was brought up at the Caughley Works, near Broseley, as we have already observed, as an engraver. He then went to town and worked for Spode, at his London house of business in Lincoln's-inn-fields. In 1788, he came to Stoke, and bought land belonging to a Mr. Hassall, and built a house and works on the site, which has since become so celebrated. He entered into partnership, in 1790, with Mr. Joseph Poulson, who had been manager at Mr. Spode's works, which were at that time the principal in Staffordshire. The firm was joined, in 1793, by Mr. Pownall, who quitted it in 1800. Mr. Poulson died in 1809, leaving Mr. Thomas Minton alone to conduct the business. His second son, the subject of our present notice, was born on the 4th of February, 1793, in his father's house, which was then on the banks of the Trent. Up to the year 1798, earthenware alone had been made at the Stoke Works, and the staple of the business consisted of white ware ornamented with blue, in imitation of common Nankin, and in that branch of production the abilities and experience of Mr. Thomas Minton as an engraver had acquired for the firm a good commercial reputation. Mr. Herbert Minton was educated at Audlam School, in Cheshire. The manufacture of semi-transparent china was commenced in the year 1798, but owing to its proving unprofitable, that department of production was abandoned in the year 1811, to be resumed about 1821. In 1817, Mr. Herbert Minton and his elder brother, who subsequently entered the Church, were admitted into partnership with their father. About 1825, a marked improvement was effected in printed earthenware, both in the body, which was made whiter and purer, and in the glaze, in which borax, to a great extent, took the place of lead. Owing to family circumstances, Mr. Herbert Minton nominally retired from the firm, during the years from about 1823 to 1836, when, on his father's demise, he succeeded to the business; his brother having left the business to enter the Church, about the year 1821. Shortly after his father's death, Mr. Herbert Minton admitted Mr. John Boyle as a partner, who remained for about five years, and then joined the firm of Wedgwoods. Mr. Boyle's place at Stoke was taken by Mr. Michael Hollins. The last phase of the firm, for about ten years previous to Mr. Minton's demise, consisted of Mr. Minton and his nephews, Mr. Hollins, and Mr. Colin Minton Campbell. The business now remains in the hands of the two last named gentlemen.

Mr. Herbert Minton's industrial career, as assistant and principal, may be looked upon as extending over some fifty years of the present century, a period hitherto without a rival in the great history of civilisation—one of social progress and commercial development, of restless energy of thought and untiring labour, crowned by innumerable conquests of mind over matter. Of that apparently inexhaustible activity, intellectual and physical, which has formed the dominant characteristic of the past half-century, Mr. Minton offered a perfect type, and it was rather through this element than any other that his influence was so powerful as a stimulant and fertiliser. Neither a man of profound research nor an educated artist, neither an economist nor an inventor, by courage and ceaseless energy he brought to bear upon the creation of his ultimately colossal business, such a combination of science, art, organisation, and invention as can be paralleled only by that rare union of qualities which impressed the stamp of genius upon his great predecessor, Josiah Wedgwood. A clear head, a strong body, rare powers of endurance and observation, a cool judgment in spite of a singularly sanguine temperament, a kindly nature, and genial manner, were the leading characteristics of Mr. Minton; and with such natural gifts, and an amount of perseverance to which I know no parallel in history (excepting, perhaps, that displayed by the celebrated potter, Bernard de Palissy), he was enabled to benefit his country while building up his own fortune, and to do credit to the age in which he was born, thereby winning lasting honour for his memory.

Fifty years ago, Mr. Thomas Minton's establishment at Stoke gave employment to just about fifty hands, and at the date of his son's death upwards of 1,500 were in active occupation. It has been estimated by that distinguished authority, M. Leon Arnoux, that the value of our exports of ceramic manufactures, which amounted to £573,000 in 1840, cannot be now valued at less than £2,500,000, having more than quadrupled in the interim. To that rapid development Mr. Minton's activity largely contributed; and we shall now proceed to examine, in some little detail, the various branches in which he most strenuously aided, viz.:—

1. Earthenware and ordinary soft porcelain.
2. Hard porcelain.
3. Parian.
4. Encaustic tiles.
5. Azulejos, or coloured enamel tiles.
6. Mosaics.
7. Della Robbia ware.
8. Majolica; and
9. Palissy ware.

As opportunities occur occasion will be taken to elucidate the remarks made on each section, by reference to the beautiful and very valuable collection of specimens kindly exhibited by Messrs. W. P. and G. Phillips, of Oxford-street and Bond-street, at present trading under the style of Chamberlain and Co.; and also by a few novelties forwarded from Stoke to the Museum of the Department of Science and Art. Mr. Hews, Messrs. Minton's superintendent at Albion-wharf, London, has also kindly selected and arranged, for our information, abundant materials for the illustration of the sections of encaustic tiles—Mosaic, Azulejos, and Della Robbia ware.

In the first place, then, it may be observed, that Mr. Thomas Minton's efforts and attention were limited to the improvement of earthenware and soft porcelain, to which the trade of the firm was almost exclusively confined until about 1830, the remaining branches having been all originated under the auspices of his son and his son's partners. Although the firm had closely followed the excellent practice of the great Staffordshire houses of Spode and Davenport, and had succeeded in vastly improving the aspect of blue printed earthenware, and manufacturing good current porcelain, for the most part in the style of old Derby, it was not not until the above-mentioned year (1830) that any aristocratic patronage and attention were bestowed upon the house and its productions. It is still told with unction by the old workmen, how Mr. Thomas Minton was, like his son, a zealous patriot and good conservative; and that how, when the Duke of Wellington took a tour, with a brilliant suite, in the manufacturing districts, and made an entry into the town of Stoke, with the Duke of Sutherland, with whom he had been staying at Trentham, Mr. Minton turned out with all his workmen, and welcomed the hero of Waterloo as such a hero should be welcomed. The heartiness of the proceeding so pleased the ducal visitors that they ordered the carriages to stop, and went over the manufactory, much to the delight of the workmen. From that day forward a friendly and genial interest was taken in the progress of the establishment by the Duke and Duchess of Sutherland, whose example was speedily followed by Lord Harrowby, Lord Crewe, and many others of the nobility. The excellence of the bodies, glazes, gilding, and colours of the old establishments of Bow, Chelsea, Derby, and Worcester, left but little room for novelty and improvement, so far as excellence is concerned, to the Staffordshire manufacturers. The only path open to them was by greater economy in every process, and by carefully recognising and discriminating the talents of their workpeople, to endeavour to convert the class of goods which had been previously of altogether exceptional demand and production, into objects of ordinary commercial supply and demand. So far Mr. Thomas Minton certainly succeeded, leaving it to his son to rival, and indeed surpass, the models he had been content to follow at some distance. After the year 1825, when the Derby manufactory began to decline rapidly, many skilful workmen joined the Stoke Works, and the class of goods involving artistic decoration rapidly improved. Among the best painters employed by Mr. Minton at that time were Steele, Bancroft, and Hancock, in fruit and flowers.—Mr. John Simpson held the position of principal enamel painter of figures and the highest class of decorations from about 1837 to 1847, when he came to town to take charge of the department of enamel painting on porcelain at Marlborough House. Mr. Samuel Bourne remained as chief designer to the firm until 1848, when the growing importance of Schools of Design effected a change. The lead was then taken by M. Jeannest, until his lamented death; and here I should note Mr. Minton's deep appreciation of M. Jeannest's rare capacity as an industrial artist. Often and often he has acknowledged to me the especial obligations he felt himself under, both to M. Jeannest and to his friend and best counsellor, M. Arnoux. M. Carrier, a very clever sculptor, was subsequently employed to design many graceful objects; and M. Protât, well known through the part he took in the splendid sideboard, for which M. Fourdinois gained his Council Medal at the Exhibition of 1851, is now the principal modeller. No less than fourteen of Mr. Minton's *employés* received medals and other rewards at the late Paris Exhibition. After the troubles of 1848 in France, Mr. Minton was so fortunate as to secure the co-operation and services of M. Leon Arnoux, a gentleman who had long enjoyed the reputation of being perhaps more profoundly versed in the mysteries of ceramic manufacture than any other *savant* in France. To that gentleman's zeal and ability, and the heartiness with which he entered into his principal's views, as well as the taste with which he realised them, Mr. Minton is indebted for a large share of the brilliant success of the efforts made by the firm for the Universal Exhibitions of London in 1851 and of Paris in 1855. A marked improvement also took place in the whiteness and transparency of the porcelain body, the beauty of the lustrous glaze, the purity of colours previously but imperfectly realised, such as carmine purple, bleu turquoise, gros bleu, bleu de Vincennes, pomme vert, rose du Barry produced by combinations of gold with salts of ammonia, and others. It is but just to remark here how warmly the production of this last-named tint, by Messrs. Rose, of Coalbrookdale, for Mr. Daniell, of Bond-street, was received at the Great Exhibition. The class of painting, too, was raised from the mannerism of work done by the dozen into that suited for objects designed to rise from ordinary utilitarian use into " morceaux d'amateurs," or choice ornaments worthy of the cabinets of collectors.

It may be well here to note how useful an element of social economy is to be found in the education of the workman, requisite to produce such porcelain as Mr. Minton lately caused to be decorated in vast quantities. Wages alone form an item of nearly sixty per cent. upon the cost of production of such objects, whereas for ordinary fairly decorated earthenware, they would scarcely enter for one-half that rate. Hence the amount of employment afforded, and the comparative well-being of the workman.

An amusing illustration of the widely-spread reputation Mr. Minton's wares acquired for strength and soundness of manufacture, has been mentioned to me by one of the officers of this Society. On the occasion of one of the exhibitions of English manufactures, one of Pickford's carmen was delivering a lot of china at the entrance, and on his transferring it rather rudely from his waggon to the hall-floor, the officer naturally remonstrated, when the man replied, "Oh! never fear Sir; it's Minton's—it won't break."

As the members of the Society of Arts had an opportunity of judging of his rare knowledge and capacity, when M. Arnoux delivered, in this room, his able lecture on the results of progress in ceramic art manifested in the Great Exhibition of 1851, I need not say with what respect his verdict as to the credit due to Mr. Minton, for his products in fine and highly-decorated porcelain, exhibited in Paris in 1855, should be received.

M. Arnoux observes, in his Report to the Board of Trade, after briefly describing some of the leading features of Mr. Minton's exhibition, that:—" As Mr. Minton has obtained these magnificent results by his own unaided efforts, and at his own pecuniary risk, many persons do not hesitate to award as much credit to them as to the manufactures of Sèvres, which have required the co-operation of a large number of talented men, as well as of unlimited State funds. It was a piece of good fortune to Mr. Minton that both he and the Imperial Manufactory should exhibit, at the same time, vases of the old Sèvres design, because the advantage was, in some instances, upon his side, as his coloured grounds are quite pure, and his gilding brilliant and substantial."

M. Arnoux thus further vindicates the peculiar class of " body" out of which the English porcelain is almost entirely made, in contradistinction to the usual hardware or kaolin and petuntse bodies of the continent, which last are entirely composed of infusible China clay, or decomposed felspar and a fusible flux, both materials existing in a normal form in nature.

" Certain very particular amateurs bring an objection against British porcelain, and say, that as it has phosphate of lime for its basis instead of being composed entirely of pâte frittée, it has no claim to be called pâte tendre. This objection appears to be nearly groundless. The chief beauty of the pâte tendre consists in the complete amalgamation of the colours with the glaze, and also in its capability of receiving certain tints which cannot be applied to any other kind of porcelain, such as turquoise blue, emerald green, and rose du Barry. If our porcelain combines these qualities in the highest degree—if its whiteness and transparency have been increased by the employment of phosphate of lime, who has any reason to complain? Our productions possess all the advantages of the old porcelain, and have, in addition, several accessory ones; we shall, therefore, do wisely to uphold this manufacture, since it brings us nearer to perfection."

We now proceed to the second branch of our subject, the hard porcelain manufacture, which, though through the discoveries of Cookworthy, extensively manufactured for a time, had been altogether abandoned in this country for the compound body just alluded to, until the year 1839, in which Mr. Minton, in conjunction with Dr. Turner, took out a patent for its manufacture.

The plan proposed, however, was not carried beyond a series of experiments until 1849, when, with the assistance of M. Arnoux, Mr. Minton resumed the attempt to make a body infusible, at very high temperatures, and of elements so pure as to be unaffected by ordinary chemical solvents. The renewed experiments succeeded so well, that in 1851, vessels for the laboratory were exhibited by Mr. Minton, and pronounced by judges to be superior to the Meissen and Berlin wares of the same description, which had previously entirely supplied the English demand, amounting to little less than £60,000 worth annually. The result was most favourably reported on by the Duke of Argyll, President of the Jury of Class XXV. at the Great Exhibition of 1851, who stated that Mr. Minton's crucibles and capsules were subjected by Mr. Henry, at the instance of the jury, to the severest chemical tests, along with specimens from Dresden, and were found to stand those tests with perfect success; and that, besides being fully equal to the German ware in quality, they had the additional merit of being considerably cheaper. The jury, therefore, looked upon the successful establishment of this manufacture in England as a matter of much importance and interest in a scientific point of view.

We now arrive at the third section of our subject, the manufacture of "Parian," the well known material in which a very fair imitation of marble has been attained. There has been considerable discussion with respect to the rival claims of the houses of Copeland and Minton to the origination of this material, and the jury of 1851, after receiving statements from both firms, deduced therefrom, that "whichever party may have actually been first in publicly producing articles in this material, both were contemporaneously working with success towards the same result." On these grounds, as well as on their conviction that all of those bodies, respectively known as Parian, Carrara, and statuary porcelain, were but modifications of that which had been long known, and applied to the same department of art under the name of biscuit, the jury declined to adjudicate between the claimants. They, however, fully appreciated the value of the material and its probable salutary influence on public taste. My own impression certainly is, that as a manufacturing invention, after the Sèvres and Dresden biscuit, and Wedgwood Jasper, there was but little merit in the introduction, but as a commercial idea it was, unquestionably, most happy and well timed; and I am inclined to receive with great respect the statement of Mr. Robert Hunt, that this idea originated with Mr. Thomas Battam, the well-known and able artist directing the extensive porcelain manufactory of Mr. Alderman Copeland, at Stoke-upon-Trent, in the commencement of 1842. "After a series of experiments he succeeded in producing a very perfect imitation of marble, both in surface and tint. One of the earliest specimens was submitted to the Duke of Sutherland, who expressed his unqualified admiration of the material, and his high appreciation of the purposes to which it was being applied, and became its first patron by purchasing the sample submitted. This was on the 3rd of August, 1842, a date which marks a memorable event, as the commencement of a trade now not only of large commercial advantage to the potteries generally, but, fortunately, of a class that has most materially advanced the artistic state of English ceramic manufacture."

From the first launching of the material, a lively competition sprang up between the firms of Copeland and Minton, and to both it unquestionably proved a source of increased profit and extended reputation. It was also most useful in two ways—in teaching the public eye to recognize pure beauties in graceful form divested of any possible vulgar glitter, and in attracting to the potteries a class of artists such as had not found employment there since the days of Wedgwood.

The manufacture is one of much difficulty, as not only is great care necessary in fitting the various parts together, each object being moulded in several pieces, which are united and dried and then exposed to successive firings, but much judgment and experience are requisite in drying and firing, as in these operations they frequently shrink to three-fourths of their original size.

Mr. Minton introduced various modifications into the process at first adopted at his works, and succeeded in reducing the shrinkage from one-fourth to one-fifth. To the members of the Society of Arts, who must recal the successive brilliant displays presented at their Exhibitions of 1847-8, and 9, by the firms of Copeland and Minton, as well as their efforts in 1851 and 1855, it is unnecessary to dwell further upon the results respectively attained. We pass, therefore, fourthly, to that branch of our subject in which Mr. Minton's individuality shone most conspicuously, viz., the manufacture of those encaustic tiles in the production of which he remained at his decease without a rival.

It was during the last century only, that the attention of antiquaries became specially directed to the ancient tiles to which the designation of encaustic has been given, and which were very generally adopted by the architects and builders of the middle ages to form the pavements of churches and other structures throughout our native country and some parts of France, especially Normandy. The earliest which have been found have apparently belonged to the latter part of the twelfth century, but it appears from the excellence of the manufacture, the quality of the remains, and the beauty of the designs, that the culminating point of excellence and popularity was attained during the thirteenth. Examples have been found in Ireland, Scotland, and all parts of England, and notably in the latter country at Westminster, Gloucester, Malmesbury, Salisbury, Romsey, Malvern, Tintern, Winchester, Tewkesbury, and Chertsey; the specimens which belonged to the last named place being the most admirable, in point of manufacture, of any which I have yet had an opportunity of studying. Another beautiful specimen is the pavement in the Chapter House at Westminster, and it is also one of the earliest, its date being coeval with that of the building it decorates.

Much variety of design is to be found in tiles of this description, owing to the fact that their manufacture was apparently carried on by almost every religious house which possessed clay of a proper description for the purpose. The devices generally found upon them consist of armorial bearings, mottoes, monograms, ornaments appropriate to the architecture of the building, sacred symbols, and texts of Scripture or pious maxims. In some cases tiles with incised inscriptions were used instead of stone slabs to mark the site of graves which lay below the floor of a church.

It would be irrelevant to dwell upon the archæological interest of these reliques of the past, but it is essential to note the important part they played in enhancing the general decorative effect of the finest mediæval interiors. A close examination of many of these tiles, and the discovery, at Great Malvern and St. Mary Wilton, near Droitwich, of two ancient kilns, in which tiles in different stages of manufacture were found, enabled those interested in the matter to predicate almost with certainty the ancient process of manufacture, which appears to have been somewhat as follows.

The moist clay having been well beaten together was compressed into the form of thin squares, which were generally of the size of from four to six inches and one inch in thickness. These were probably exposed to the sun until they had acquired the proper degree of plasticity to retain any design impressed upon them by a stamp, so formed as to indent the ornamental pattern upon the face of the tile. The indented pattern was then filled up with a different coloured clay, which was usually pipe or other white clay. After the tiles were put into the furnace, a thin coating of powdered lead ore, mixed with clean sand, was probably dusted over their surfaces, so as to give a vitreous glaze when withdrawn from the kiln, which gave permanence to the work, and added to the richness of the effect. This glaze gave the white clay a slight tinge of yellow, and added fulness of tone to the red colour which usually formed the ground upon which the pattern was relieved.

The revival of these processes was, I believe, first contemplated by Mr. S. Wright, of the Staffordshire Potteries, about thirty years ago, who took out a patent for it as an original invention. It was some years before any good specimens could be obtained, but he advanced sufficiently to encourage the hope that success might be ultimately attained. This, however, was reserved for Mr. Herbert Minton, who purchased the patent to effect. He set to work with a thorough English determination to succeed, and with untiring energy and perseverance, notwithstanding repeated failures, and many difficulties and obstacles which presented themselves in his successive experiments, at length succeeded in producing tiles very far superior to those of the ancients. From the above hasty description the problem of manufacturing encaustic tiles does not appear, at first sight, to be attended with any great difficulty or complexity; in practice, however, in the present day, the case is very far different. In the first place, clays have to be mixed to burn with certainty to uniform tints throughout their bodies. In the second, each of these bodies requires different tempering so as to correct the irregularities of shrinkage induced by the diversity of materials mixed with the clays to obtain the required colours, so that the filling-in in one-coloured clay shall not pull away and "craze" all over, or detach itself from the incised base into which it is to be fixed by firing. In the third place, the range of colours used by the potters of the middle ages was limited to two—buff and red. Gradually, Mr. Minton added to this range—marone, cream colour, black, grey, and fawn, in through coloured clays; and blue, green, white, crimson, lilac, and purple, in enamels of porcelainous body, floated over portions of the surface of the tile slightly sunk to receive comparatively thin coatings of brilliant colours.

The difference in the shrinkage of the clays, while merely drying, or from simple evaporation, and while they are exposed to the heat of the fire, is an even more difficult problem than that involved in the adjustment of the materials for a compensating balance-wheel to a chronometer, or a pendulum to a clock, since that which does for the drying may not suit the firing, and *vice versâ*. Dependent upon this nice balance of conditions are not only the cohesion of the surface without any gap or fissure, but the flatness of the tile as a whole. This last quality may be also deranged by the kiln not working equally, so that one side of a tile shrinks before the others. The remedy is chiefly derived from an intimate practical acquaintance with the actual shrinkage of the various materials, and not only so, but also of their various combinations. These last are not always, nor are they often, results that can be calculated from the known constants of the separate materials of which the tiles are composed, since those constants are sometimes deranged by chemical action consequent on admixture. Great practice, based upon costly experiment, can alone give the necessary knowledge.

The great danger which the makers of encaustic tiles have to guard against continually is the impending risk of having a whole kiln full of valuable tiles spoiled in the firing, for in order to bring out the colour and obtain the requisite hardness of texture the fire must be carried to the very verge of destructiveness, and by overstepping that limit but a little, actual destruction to the tiles in the kiln ensues. Moreover, until the kiln is opened, no one can certainly tell what its fate may be. The criterion usually adopted is the shrinkage of "trial pieces," which are tried by a guage, and as soon as they will drop into the guage, the kiln has been sufficiently fired. Kilns usually take four days and four nights firing, and after that three or four days cooling.

The following is a rapid summary of the processes actually employed in Mr. Minton's perfected manufacture. The clay is entirely obtained from the immediate neighbourhood of the Stoke works, and as was the case in ancient practice, two different varieties are found without any foreign admixtures to produce when fired satisfactory red and yellow colours. Other tints are obtained by adding to these and other bodies various metallic oxides. In order to adjust these bodies to an equilibrium of shrinkage, both in the kiln when fired and after cooling, other materials, such as Cornwall stone and clay, and silex from Kent, &c., are added, and in their nice adjustment, as the greatest risk is incurred, so is the greatest skill involved.

After the clays have been properly purified, and brought into a liquid or "slip" state, they are passed through fine lawn sieves, especially those which are to form the surface of the tile. They are then boiled in the "slip kilns" to bring them into a plastic state, ready for the moulder. The pattern which is cast in relief in plaster is placed in a metal frame, of a size sufficient to allow for the shrinkage of the tile in the process of its manufacture (for a square of 6 inches the size of the mould being 6⅝ inches square). The surface of the tile is formed of fine clay flattened out, and ¼ inch thick. This being pressed on the plaster pattern, of course receives an exact impression of the design in "entaglio." The requisite thickness of the tile is gained by adding upon this first layer of fine clay, clay of a coarser kind, half an inch thich, covered again by a stratum of the same clay which forms the face, so as to counteract its shrinkage, which would otherwise pull the tile into a curved section. The whole is then put under a press to give it sufficient solidity. This being done the colours required in the pattern are added by pouring the coloured clays in a slip state into the parts of the indentation intended to receive them according to the design. The slips flood the surface of the tile, and thus for a time obliterate the design altogether. In this state they are left three days, until the water has nearly all evaporated, when the surface is carefully scraped and planed until the pattern is again seen, and all unevenness removed; but still there is no great difference of colour discernible in the clays which form the surface of the tile. After this the tile is left in the drying house for a fortnight to three weeks, when it is taken to the oven, and there for 60 hours is submitted to an intense heat, which brings out the colours. The tile is then finished, unless it is required to be glazed, which is done by simply dipping the surface of the tile into the glaze, and then placing it in a glazing oven to be refired.

The requirements of modern art have been met in the production of bright blues, greens, &c., by inlaying with a porcelain body coloured by means of oxides of cobalt and chrome, and a mixture of chrome and zinc. The introduction of the colours involves some not inconsiderable manufacturing difficulties. For instance, there is no red clay known (excepting those of Staffordshire and Broseley) which will satisfactorily bear the amount of fire requisite to bring out some of the last named vitreous colours, and even with them the risk and loss is frequently serious, and the compensating process varies as the qualities of the clay which forms the body to be inlaid. One of the many causes of the costliness of these vitreous colours as applied to tiles, is the great room tiles so coloured occupy in the kiln, the face of each being protected by a plain tile, which has no value for any other purpose.

The contact of certain colours in the same tile is usually incompatible; for instance, green next to buff, as the buff is stained by the green. No tiles ought to be fired face to face, as the colours, to use a printer's term, "set off" even where the faces are not in actual contact. The volatilization of the metallic oxides will produce a clearly defined image of one tile on the face of its opposite; and this vaporization has a tendency to affect the general tone of colour of the tiles confined in the same "sugar" or fire-clay box in which they are burned.

The evil tendency of substances usually considered the most fixed in nature to resolve themselves into "thin air," under the power of intense heat, compels the potter to saturate with glaze the inside of the sugars in which his glazed goods are fixed, in order to hinder the absorption of the vaporized glaze of his goods by the dry and thirsty substance of the sugars. A glazed tile fired in an unglazed sugar would be robbed of all its lustre. These difficulties have suggested the practice of that slight kind of glazing technically called "smearing," in which the whole quantity of glaze is applied by smearing, not the goods to be glazed, but the inside of the sugar containing them. Heat is applied sufficiently intense to volatilize the glaze, and to prepare the surface of the goods to appropriate it to themselves in its vaporous state. The subdued glaze upon chemists' mortars and upon some encaustic tiles, is obtained by this process.

Towards the expiration of the term for which the patent had been taken out originally by Mr. Wright, Mr. Minton permitted Messrs. St. John, Flight, Bar, and Chamberlain, of the Old Worcester China Works, to manufacture encaustic tiles under a license. They were, however, at first, under the great mistake of supposing that any kind of clay, or at least that the clays around Worcester would do for the purpose. Finding that these would not answer, they were at last compelled to send to the celebrated clay beds of Broseley for their materials, thus increasing the cost of the tiles produced. This Company, abandoning the manufacture, was succeeded by Messrs. Maw and Co., who soon perceived the disadvantages under which their predecessors had laboured; and therefore determined to remove their works to Broseley, and thus to plant themselves in the immediate vicinity of those clays which have no rival in this country, except in the neighbourhood of Messrs. Minton's works in Staffordshire.

Mr. I. H. Maw, to whom I am indebted for much valuable information in respect to the encaustic tile manufacture, informs me that he was first led to the subject whilst upon a visit to the parish of Westleigh, North Devon, at the time when the old tiles of the church were being taken up. He has still by him the first step he made in his attempt at reproduction, in the shape of a mould carved in one of the Westleigh patterns out of a block of slate.

Among the most important pavements of encaustic tiles executed by Mr. Minton may be pointed out those of the Houses of Parliament, of Osborne, of the Hall of Assembly at Washington, in America (a pavement of vast extent and elaboration, entirely designed and worked out by Mr. Green, who has now charge of the Drawing Office); of the St. George's Hall, and Town Hall, at Liverpool (produced under the practical direction of Mr. Eyre, who preceded Mr. Green); and of the cathedrals of Ely, Salisbury, and Gloucester. Far and wide over the land, in churches, chapels, halls, private dwellings, and public institutions of all kinds, these beautiful tiles have been laid down, and have given universal satisfaction. Indeed, the measure of success has been in the exact ratio of the difficulties overcome, difficulties which Mr. Minton declared he would surmount, even "if the manufacture of every single perfect tile cost him a guinea."

Having achieved so great a success in his encaustic tiles, Mr. Minton turned his attention to the fifth branch of ceramic art we purpose dwelling on to-night, the Azulejos, or decorative tiles of an earthenware body, covered with opaque white enamel, and coloured in varying thicknesses of transparent enamel tints of the greatest possible brilliancy.

It is to the Arabs, who, probably, derived the art from the Persians, that we are indebted for the introduction into Europe of these beautiful coloured tiles, of which so many specimens still ornament the walls of the Moorish buildings in Spain. In these the patterns are defined by ridges raised above the surface of the tiles, circumscribing hollows, which are partially filled with a thin layer of enamels of various colours, the whole tile having been previously covered with a white "stanniferous glaze." Some specimens of coloured Spanish tiles, of the same kind but more recent date, are to be seen in the museum of the Hotel Cluny; of these many are ornamented in the renaissance style or with finely drawn heads. These are chiefly blue upon a white ground, while other specimens, like the tiles of the eleventh and twelfth centuries, have simply an incised pattern stamped upon them. By a careful examination of some fragments of azulejos brought to this country by Mr. Owen Jones, and of those which form the well-known pavement of the Mayor's Chapel, at Bristol, Mr. Minton was enabled to ascertain the process by which they had been made, and he had little difficulty in arriving at most satisfactory results. How perfectly he succeeded must be obvious to all who have ever examined the beautiful pavements and dados of the Alhambra Court in the Crystal Palace. Various modifications of azulejos, some perforated and others modelled into foliage, were introduced at the suggestion of the late Welby Pugin, who, in this department of ceramic art, as well as in improving the designs for porcelain slab paintings, printed earthenwares, and encaustic tiles, had been of great assistance to Mr. Minton. Their enthusiastic natures were, indeed, so kindred, that their business relations speedily ripened into fast and enduring friendship. It is to be regretted that, with a few notable exceptions, architects have not adopted this beautiful manufacture as they ought.

Our sixth section comprises the revival of geometrical mosaic as a structural adjunct. This revival may be said to have commenced in 1839 and 1840, with the attempts of Mr. Blashfield to produce satisfactory pavements by the employment of coloured cements, inlaid asphaltes, and Venetian Pisé work; with the clever inventions of Mr. Singer, of Vauxhall, aided by his ingenious assistant, Mr. Pether, and last, but not least, with that brilliant idea of Mr. Prosser's, of solidifying China clay in dry powder, by subjecting it to great pressure in iron moulds from which it could not escape, and thus, at the same time, avoiding the shrinkage due to the evaporation of the moisture previously indispensable to keep the clay in a plastic state, and obtaining, by the forcing together of the moleculæ, a substance of extraordinary density and evenness of texture throughout its body. Quite recently, I may here mention, a process has been invented by Messrs. Maw and Co., who are now actively engaged in the mosaic business, whereby that closeness of texture, and consequent hardness of surface, only to be obtained by aqueous shrinkage, may be given to tesseræ, hitherto dependant for hardness upon the mechanical pressure of materials in a dry or nearly dry state. Of Messrs. Blashfield's, Singer's, and Prosser's abilities, Mr. Minton availed himself largely. Mr. Blashfield carried on an active agency for him in London. From Mr. Singer he took out a licence for a patented system of laying small tiles and tesseræ, and in Mr. Prosser's patent he became largely interested. The object for which Mr. Prosser's presses were first set to work were the manufacture of buttons of different kinds, and for some time a very large trade was driven in this department of industry. Subsequently, however, the ingenious automaton machine, invented by M. Bapterosse, of Paris, by means of which multitudes of buttons are made at every stroke of the die, and at once carried off into a reverberating furnace by means of which they are fired in about ten minutes, superseded Mr. Prosser's original form, and Mr. Minton abandoned the manufacture of buttons. It was, I believe, Mr. Blashfield who suggested to Mr. Minton the applicability of the process to the production of tesseræ, or small cubes, suited for the formation of tesselated pavements, in imitation of those of the ancients. Mr. Minton went into the matter with great spirit, and excellent tesseræ of all colours were speedily made. For their arrangement Mr. Owen Jones suggested many very beautiful geometrical combinations. In the winter of 1844 I went abroad to study my profession, and took with me a commission from Mr.

Blashfield to collect for him any thing I might meet with calculated to assist in utilizing these tesseræ, upon the manufacture of which Mr. Minton was at that time entering. Finding in Italy and Sicily a good deal of material to which, as far as I could ascertain, no one had previously paid much attention, I was induced to make the series of drawings subsequently published in my work on the "Geometrical Mosaics of the Middle Ages." Mr. Blashfield having shown the drawings to Mr. Minton during my absence, on my return, in the spring of 1847, I found the latter anxious to employ me to assist in the extension of his views, both with respect to tesselated work in general and its combination with encaustic tiles. My first interview with Mr. Minton was in reference to the pavement for Osborne, upon which he consulted me professionally, and from the date of that interview until his death I was happy in securing his kindly interest and regard. The drawings I made for him in consequence of that interview are exhibited this evening. It was through Mr. Blashfield and Mr. Minton that I was induced to present myself, for the first time, as a lecturer in this room, on the 3rd of February, 1847. When, in 1849, I had the distinguished honour to be employed by this Society to examine for them and report upon the Parisian Exposition of that year, and upon the system of expositions as conducted in France, I had the good fortune to examine the whole of the ceramic products with Mr. Minton very carefully; again at Birmingham in 1849; in this room, at the Mediæval Art Exhibition; in Hyde-park, in 1851; and at Paris in 1855; I had similar good fortune: and I can certainly say, that, not in the branch of mosaic alone, but in every direction in which it is possible for ceramic products to be applied to art purposes, Mr. Minton's zeal and interest were, if possible, more keen and sanguine in 1855, when all that he could have hoped for ten years previously had been crowned with success, than they were when he stood upon the threshold of his first and happiest introduction of novelty and improvement. Having dwelt at length upon the various processes connected with mosaic work, in a paper printed in the Society's Transactions, new series, Vol. I., I need not detain you in reference to them; neither is it necessary for me to dwell upon the excellence, beauty, and durability of nineteenth century mosaic, so long as the pavement of your hall, the tesseræ for which were presented by Mr. Minton, remains in its present perfect and elegant condition. The central feature of its design is based upon one of the drawings I made for Mr. Blashfield, from the church of San Bartolomeo nell' isola del Tevere, Rome. The design, and the laying down of this pavement, which is a first-rate piece of work, were presented by Mr. Blashfield. Among all the numerous pieces of excellent tesselation carried out by Mr. Minton, I think I may point to the pavement of the Atrium and Tablinum of the Pompeian House, in the Crystal Palace, executed from my designs, as at once the best, the best known, and the one of which he was the most proud.

Time warns me to proceed, without delay, to the remaining very important sections of our subject. These, respectively—Luca della Robbia ware, Majolica, and Palissy ware—though each possessing distinct characteristics in point of art, and claiming attention for excellencies, either of design or fabrication, special to each—have yet so much in common, that it will be best, and probably clearest, to advert to them as a group. Theoretically speaking, the basis of manufacture is common to all three—viz., a calcareous clay body, covered with an opaque white enamel, composed of sand, lead, and tin—colours being added by enamelled glazes.

At this distance of time it is difficult to determine whether the manufacture of Majolica ware was derived by the Italians from Sicily, Greece, or Majorca, or whether they owe the fabric to the improvements introduced by Luca della Robbia early in the fifteenth century, previous to which the pottery of Umbria and Tuscany was a common earthenware, covered with an opaque veneer, made from a white clay found in the province of Sienna, and known as "terra di San Giovanni." When covered with this revêtement, the vessel was heated till the outer coat was reduced to a state of "biscuit;" it was then covered with a glaze, in which any colour desired was mingled, or the white coating was ornamented by painting in enamel colours, which were then covered with a transparent glaze. A final baking vitrefied the colours and glaze, thereby rendering them permanent. Wares so produced are known to connoisseurs as "Mezzo-Majolica." Amongst many other improvements, Luca del Robbia substituted, for the original coating of white clay, a thin opaque glaze composed of sand and tin, with a small quantity of antimony and other metallic substances. Through his rare talent as a modeller, his ware attained an extraordinary popularity, and was used extensively as a beautiful architectural adjunct throughout Tuscany. Some idea of the scale upon which this material was employed may be obtained by an inspection of the great frieze from the Ospedale dei Poveri, at Pistoia, a reproduction of which surmounts the Renaissance and Elizabethan Courts at the Crystal Palace. Our modern architects have singularly neglected to avail themselves of Mr. Minton's beautiful revival, and I believe that my use of it at the Paddington Station, and in one or two other places is almost unexampled. Luca della Robbia's process appears to have been known to the Arabs in the thirteenth century, and is believed to have been in their possession as early as the ninth century.

An extensive trade in vessels of Majolica ware was carried on in Italy in the sixteenth century, principally in the Duchy of Urbino, whose duke, Guid'Ubaldo della Rovere, in 1509, granted a patent to Giacomo Lanfranco, of Pesaro, for the application of gold to the ornamentation of earthenware. Asciano is considered by Passeri to have been the first town in Italy possessed of an established manufactory of Majolica ware, but at the date referred to a very large quantity was produced in the towns of Perugia, Rimini, Spello, Bologna, Sienna, Forli, Civita-Castellana, Faenza, Gubbio, &c., in the last mentioned of which some years later a series of improvements were introduced into the manufacture of this species of pottery by Maestro Georgio Andreoli, who introduced a splendid ruby colour into his draperies. When completed, the painting was often covered with a glaze, which in firing, gave a peculiar brilliant metallic and prismatic lustre to the surface of the object fired. Vincenzo Andreoli, the son of Maestro Georgio, carried on and still further improved his father's manufactures.

Majolica ware attained great perfection under the Fontanas and Baptista Franco, declining in excellence under the too facile hands of the Zucchari.

During its best days—between the years 1520 and 1560—the engravings of Marc'Antonio, Marco di Ravenna, and others, from the designs of Raffaelle and Giulio Romano, became diffused throughout the country, and were eagerly seized upon and applied to the decoration of the ware which at that time was largely used by the Italian nobles for their tables as well as for ornamental purposes. Timoteo della Vite, one of Raffaelle's favourite pupils, is said to have greatly improved the forms and ornaments of these vessels. Some specimens of Majolica ware, which had formed part of the collection of the Duke of Buckingham, having come into Mr. Minton's possession, his attention was directed by them to a revival of the art, with what success is shown by the various beautiful productions which adorn the room this evening.

For much of the success of this revival, Mr. Minton was indebted to the consummate knowledge of enamel colours and glazes, as well as to the taste and judgment possessed by M. Léon Arnoux. His brilliant success in Palissy wares, in highly decorated earthenware and encaustic tiles, unquestionably won for the firm the great honours it received at the Exhibition in Paris of 1855. The demand for these objects is increasing beyond the utmost capabilities of the vast establishment at Stoke to supply. To recur to the story of Bernard de Palissy, would be only to repeat some thrice-told tale, already worn threadbare by authors and artists. The peculiar character and design of his wares must be known to all, and it is not too much to say that Mr. Minton's productions can scarcely be distinguished from the best of those over which the genius and influence of François Briot is most manifest. Did time permit, I might dwell further on the interesting experiments tried by Mr. Minton on glazed, enamelled, and hollow bricks, and on the extension of terra cottas, coloured and uncoloured, but enough has already been advanced to justify my having brought the subject of his industrial career under your notice this evening. I have been induced to do so, not from any invitation I have received, nor from any special capabilities I possess for the task of chronicler, but solely because I honoured and esteemed Mr. Minton as a manufacturer, and loved him as a friend. He indeed possessed the great gift of winning personal regard from all classes. From your Royal President, who admitted him to the earliest councils held with respect to the Great Exhibition, which Mr. Minton was one of the earliest to accept in its international aspect, and the ducal family of Sutherland, to the humblest workman in his employ, Herbert Minton won an amount of esteem and friendship, which almost merged into the warmer condition of steadily sustained affection. Among the members of this Society, of which he was long a Vice-President, he might count, I believe, friends by the hundred. With the chief representatives of the retail trade he maintained the best understanding, and with the late Mr. Phillips, whose sons exhibit to-night so fine a series of his products, for nearly fifty years he kept up an interchange of kind feelings and good offices.

In ascribing so large a measure of the progress which our ceramic manufactures have made within the last twenty years to Mr. Minton's activity, I should, however, desire to carefully guard myself against being supposed to ignore or underrate the contemporaneous labours of his partners and others. It was, indeed, mainly owing to the generous competition, in excellence at least, as much as in price, which subsisted between his firm and the establishment presided over by Mr. Alderman Copeland, that Mr. Minton's energy and resources were never allowed to flag. If one firm lighted upon a first-rate modeller one month, an equally clever painter was nearly sure to be discovered by the other. If Minton's glaze one season was more brilliant and less greasy-looking than Copeland's, next year the chances were that the latter's white paste was more perfectly white than the former, or that some other corresponding symptom of advance characterised the year's production. Any improvement which for a while seemed tending to concentrate the golden harvest upon one alone, very speedily ceased to be a monopoly, and from a point of equal excellence the struggle was renewed—the popular voice, and yet more eagerly, the popular demand, being the great prize of the contest.

This competition, was, however, for a long time, limited to the branches of fine earthenware and porcelain, the ordinary and extraordinary table services of the middle and upper classes, and the more purely ornamental specimens, such as vases and groups. The introduction of Parian statuary, or Carrara ware, as it was somewhat indifferently termed, added a new stimulant to the exertions of both parties; and, even to the present day, it is hard to determine whose productions are most excellent, when regarded from either a manufacturing or artistic point of view. Nor was it alone over the studies made by the great house of Copeland, and the activity of Mr. Battam, that Mr. Minton had to be ever watchful. His friends and neighbours in the potteries, Messrs. Ridgway, Mayer, Dimmock, Allcock, Meigh, and Boote, and Messrs. Rose, of Coalbrookdale, trod at times so close upon his footsteps in the excellent, rapid, and cheap production of porcelain and earthenware for the general market, that for Mr. Minton to have stood still for a moment would have been to lose his lead in the trade. With the Messrs. Wedgwood, who retained so many of the designs, models, and traditions which had originally established the reputation of the English Etruria, Mr. Minton, as I venture to think, wisely abstained from entering into any serious direct competition. After the death of Payne Knight, Towneley, Sir William Hamilton, Hope, Soane, Gandy Dering, Flaxman, Tassie, and others, the Dilettanti Society's energy flagged; and public taste was diverted from the pure and classical fountains of inspiration which had nourished the productions of the class of design, founded upon the best models of the antique, and which pervaded all the finest works of the great Josiah Wedgwood.

No one knew better than Mr. Minton the sacrifices any manufacturer must be prepared to make, who would enter upon the Herculean task of attempting to stem the current of fashion, however obviously contrary to right, wisdom, and good taste, it might be running. No one was more fully awake to the almost impossibility of re-creating an appetite, already and recently satiated. To stimulate the jaded imagination, no less than the jaded body, after a fitting interval of repose, food of a character as widely different as possible from that last greedily absorbed, can alone be successfully administered. Upon this principle, the wise manufacturer will prudently direct his efforts to the production of novelties, as far as possible, only in the ratio of the demand for them;—concentrating his attention while that demand is sluggish upon the improvement of current production; and dashing out into judicious speculation when he finds the public tired of its usual "pabulum," and panting for some striking variation of diet, or novelty of sensation.

Thus it was, as I believe, that Mr. Minton refrained from entering into any direct competition with the illustrious founder of the old glories of the Staffordshire potteries, leaving to the descendants of Mr. Wedgwood an undisturbed possession of the market in the class of goods ordinarily known as Wedgwood ware, now once more greedily sought for, and, as a consequence, extensively produced. In terra cotta works, Mr. Blashfield, in encaustic tiles, Messrs. Maw, in mosaics, Mr. Singer, and in the finest china, with perforated coatings and ornamented with lace dipped in slip, and hand-wrought flowers, after the manner of Dresden, Messrs Chamberlain, of Worcester (whose firm is now so well represented by Messrs. Kerr and Binns), ran Mr. Minton hard, and, to use a common expression, kept him up to his work. The greater, however, the merit of his rivals, the greater must be the credit conceded to Mr. Minton for retaining the honourable position he constantly maintained, in comparison with them, in all departments of ceramic production.

It is a hopeful and gratifying circumstance that the two men, Josiah Wedgwood and Herbert Minton, whose exertions for the improvement of this branch of manufacture were most strenuous, whose sacrifices to combine the highest degree of artistic beauty with the simplest and most certain processes of fabrication, were unremitting, and whose confidence in the golden rule of industry—that the best manufacture must, in the long run, command the market—remained unshaken by temporary failure or disappointment, should have ultimately attained, not only celebrity, but fortune as well. Each of these two distinguished men felt, to the very end of their laborious lives, that all they had done was but the germ of what might yet be done for the development of the branch of production on the perfecting of which all their efforts had been concentrated. In the very important evidence given by Mr. Wedgwood, in the year 1785, before a Committee of the Privy Council, and at the bars of both Houses of Parliament, he stated, that "important as were the advances which at that time had been made in the art, he was still of opinion that they could be considered but as the beginning of improvements; that these were still but in their infancy, and but of little moment when compared with those to which the art was capable of attaining, through the continued industry and growing intelligence of the manufacturers, in combination with, and fostered by, the natural facilities and political advantages enjoyed by the country." Mr. Minton, though ready and fluent in general conversation, was of too nervous a temperament to shine as a public speaker. On two notable occasions, however, he was forced to make some observations in public in relation to his position and experience as a manufacturer, and on those occasions he certainly spoke from his heart. When he received a beautiful silver and ebony casket, together with formal congratulations from his staff of assistants and workpeople, on obtaining the only Council medal awarded to an English manufacturer of ceramic wares by the jury of Class XXV. of the Great Exhibition of 1851, he replied as if in anticipation of the efforts he would be compelled to make in 1855:—"We are convinced that, without mutual co-operation and friendly feeling, all individual efforts are comparatively fruitless. Let not, then, past success satisfy us for the future, but rather let it act as a stimulus not only to maintain the high position we now occupy, but to go on improving, with the view of securing still higher distinctions."

Again, when the same staff and workpeople met him at the close of the last named year, to offer renewed congratulations upon his success as a competitor in the Universal Exhibition at Paris, and on his receipt of that mark of personal distinction, the Cross of the Legion of Honour, which he, in common with several others who obtained the same reward for services rendered in other departments of science, art, and industry, accepted with feelings of just pride, and ever regarded with sentiments of satisfaction,—Mr. Minton, in reply to an allusion to his long and prosperous career as a manufacturer, said, "Forty-nine years have now elapsed since I first entered the manufactory in which you and I are now engaged; and it is with much pleasure and satisfaction that I can look back upon so long a period, spent amongst my workpeople, with almost uninterrupted happiness." In conclusion, he pointed out the advantages of several institutions, in the establishment of which he had long taken a deep interest, and to each of which he had been a liberal contributor, as follows:—"I must congratulate you on your now possessing, in your own town, a School of Design, a School of Science, and an Athenæum; and I most earnestly entreat you to avail yourselves of the advantages thus afforded you; for, I am fully persuaded, that the information and practical knowledge which you will attain by making the best use of them, will enable us to produce much finer works of art than we have hitherto done."

Again, on the all important question of the right direction and scope of competition in manufacture, every sentiment put forth by Mr. Wedgwood in the admirable remarks with which he accompanied his catalogue of products, published in the year 1777, found its echo not in the language only, but in the whole life and works of Herbert Minton. In reading the following noble passages, I can almost fancy them to be the condensation by some able writer of the disjointed apothegms, which from many long and interesting conversations I should have gathered up as the manufacturing creed of the friend we have lost, and whose career we are now commemorating.

Mr. Wedgwood by his pen, and Mr. Minton by his life, may, therefore, be regarded as urging what it would be well for the honour and prosperity of our native country, if manufacturers were never to forget, that "A competition for cheapness, and not for excellence of workmanship, is the most frequent and certain cause of the rapid decay and entire destruction of arts and manufactures. The desire of selling much in a little time, without respect to the taste or quality of the goods, leads manufacturers and merchants to ruin the reputation of the articles which they make and deal in; and whilst those who buy, for the sake of a fallacious saving, prefer mediocrity to excellence, it will be impossible for them either to improve or keep up the quality of their works.

"All works of art must bear a price in proportion to the skill, the taste, the time, the expense, and the risk attending the invention and execution of them. Those pieces that for these reasons bear the highest price, and which those who are not accustomed to consider the real difficulty and expense of making fine things are apt to call dear, are, when justly estimated, the cheapest articles that can be purchased, and such are generally attended with much less profit to the artist than those that everybody calls cheap.

"Beautiful forms and compositions are not to be made by chance; and they never were made, nor can be made in any kind at a small expense, but the proprietors of this manufactory have the satisfaction of knowing, by a careful comparison, that the prices of many of their ornaments are much lower, and all of them as low as those of any other ornamental works in Europe of equal quality and risk, notwithstanding the high price of labour in England; and they are determined rather to give up the making of any article, than to degrade it."

In addition to the common zeal for progress in art and manufacture which animated these two Staffordshire worthies, there was yet a higher and a holier ground upon which they took a noble stand. In quick and expansive sympathy with the necessities, moral, physical, and intellectual, of their fellow-men, Wedgwood and Minton gave freely, with willing hearts and with unstinted hands. Our business this evening has been with the chronicles of ceramic manufactures, and not with the pious zeal and charities (however noble they may have been) of the man who has done more than any other, during the present century, to perfect the business in which he spent his life. Had his faith as a Christian, and his genial excellence as a man, been our theme tonight, instead of his abilities as an industrial agent, instead of dwelling on the faculties and energies which made him known and esteemed amongst men, a far greater prominence than it has now been thought right to award would have been given to those qualities which will stand him most in stead, now that this our brother has ceased from his labours amongst us.

DISCUSSION.

Mr. J. G. CRACE would venture to address a few words on this, as he considered, most important question. He felt so much regard for the late Mr. Herbert Minton, and appreciated so highly his endeavours to advance the manufacture in which he was engaged, that, although he felt embarrassed in addressing them, he was, nevertheless, particularly glad to have an opportunity to express how highly he valued the late Mr. Minton's moral qualities, and his high talents as a manufacturer. Many in that room had a vivid recollection of his genial, kind, and pleasant manners, and how, in matters of business, it was a pleasure to meet him at all times. They would also remember the terms in which, on many occasions, he had expressed his sentiments in relation to the improvement and happiness of the working classes, and how anxious he was at all times to advance their interests; how he built churches and schools for their benefit, and did all that he could in every way to further the happiness of all who were brought into connexion with him. As a manufacturer, the late Mr. Minton must certainly be regarded as having occupied a proud position, having largely contributed to advance the honour of this country in relation to this branch of manufacture on two celebrated and memorable occasions;

indeed, he did not know in what position England would have stood as regarded this branch of art in 1851 and 1855, had it not been for him. He (Mr. Crace) could not call to mind any former occasion in which British art was so completely vindicated as on that when the gold medal was awarded to Mr. Minton at the Paris Exhibition. His dessert service, exhibited in 1851, was rightly esteemed by the Queen as a fitting present to the Emperor of Austria, and at the Paris Exhibition in 1855, so highly were the works of Mr. Minton appreciated that there it was scarcely possible for an article to remain an hour without its being purchased, so anxious were people to secure them. In fact he thought the appreciation of those works was higher in Paris than in this country. Mr. Minton was always in advance of his time. He appreciated and enjoyed all that was beautiful, and felt a delight in realizing the most exquisite designs that were brought under his attention. As an illustration of this remark, Mr. Crace mentioned that on one occasion being shown a plate of exquisite design and manufacture, Mr. Minton was challenged to produce its equal. Having obtained possession of one of those plates, he took it away with him and succeeded in producing an article fully equal in all respects to that upon which the exercise of his skill had been challenged. There was that sort of happy, industrious, energetic character about the late Mr. Minton, which was rarely to be met with. All who knew him must deeply deplore his loss, and in this society he would be particularly missed. As regarded his works they spoke for themselves. Many present would remember the large fountain which Mr. Minton exhibited at Paris, and the elaborate manner in which it was ornamented; and in the ordinary mercantile productions, such as tea and breakfast services, such was the advance made by Mr. Minton, that they excelled that class of French manufacture, taking price into the comparison as well as quality; and the same might fairly be said of his enamelled earthenware articles. In fact, taking his productions altogether we had reason as Englishmen to be proud of our departed friend. He had not only earned a reputation which would probably live as long as this country remained; but he had greatly aided in gaining for England the respectable position she had now attained in the arts.

Mr. DANIELL felt considerable diffidence in obtruding himself upon the attention of the meeting, but he wished to testify his sympathy with the object for which they had been called together. The late Mr. Herbert Minton he had had the pleasure and the honour to claim as a friend from boyhood. He had enjoyed his society as much as any other man of his age connected with ceramic manufactures, and on that memorable occasion in 1855, when Mr. Minton representing himself, and he (Mr. Daniell) representing an equally important firm, were in Paris, they lived together in the same house and were the best of friends. To speak of the late Mr. Herbert Minton as a man, would be only to do that which had often been done before. His goodness was known to all, and his liberality was experienced by every one who needed it. When they came to speak of him as a public man and as a manufacturer, it needed not his feeble voice to say one word in his praise. His productions spoke for themselves; but though a great man had fallen from amongst them, yet greatness itself was not dead. There were others upon whom it was to be hoped the mantle of the departed had fallen, and he trusted his audience would give him credit for sincerity when he said that, though this might be regarded as the funeral éloge on Mr. Herbert Minton, he could not look upon it as the funeral oration of ceramic manufacture. The advantages which the late Mr. Minton possessed, were such as few ordinary men could obtain. Beloved by all—generous himself to all—anything he asked for was at his command. He (Mr. Daniell) recollected some years ago asking to be allowed to copy the design of a cup and saucer in a celebrated collection, but he was refused on the ground that the value of these articles would be thereby depreciated. The late Mr. Minton, however, had been differently treated, for there was scarcely a subject in any collection which he was not allowed to copy. With reference to Mr. Minton's predecessors in this branch of art, he might remind the society of one whose name was upon their records as the recipient of the society's gold medal for china and porcelain manufactures long before Mr. Herbert Minton's time. He referred to John Rose, of Coalport, who made more china in his day than all those who were mentioned in the paper. His successor still lived in the person of his nephew. It must also be remembered that there still lived in the late Mr. Minton's firm the man to whom that gentleman was always ready to acknowledge his great obligations, Mr. Michael Hollins, but for whose genius the splendid productions then before them would probably never have reached the perfection they had done.

Mr. HYDE CLARKE congratulated the Society upon the able and eloquent paper which had engaged their attention that evening. He had no contribution to offer on this subject beyond bearing his humble testimony to the readiness of the late Mr. Herbert Minton to furnish specimens or designs with a view to the spread of this branch of art manufacture. As a member of this Society he wished to express his obligations to Mr. Digby Wyatt for the paper he had brought before them, which he agreed with the last speaker in not regarding as the funeral oration of ceramic manufacture, but as a well merited tribute to one who had rendered eminent service to his country. It was only in that character that he understood the address of Mr. Digby Wyatt, and as the orator of the Society on this occasion, he had paid a well merited tribute to the memory of Mr. Herbert Minton. He also congratulated the meeting on being presided over by a gentleman who, by his personal patronage and influence, had for many years laboured so successfully to promote the manufacturing arts of this country.

Mr. GEORGE WALLIS said, as one who had the privilege to know the late Mr. Minton, and who admired his energy and earnestness, he could not but thank his friend, Mr. Wyatt, personally, for his noble paper. For some years past he (Mr. Wallis) had been in the habit of meeting Mr. Minton from time to time, and he saw much of him in the United States of America in 1853, and at Paris in 1855, and could bear full testimony to the truth of the eulogy which had been pronounced. He thought some mistake had arisen as to the true purpose of the paper, which was not on the general progress of ceramic art, but on Mr. Herbert Minton's special share in that progress. Other eminent firms had done much, each in its own special department. Copeland's, under the able direction of Mr. Thomas Battam, Messrs. Rose, of Coalport, in their way, whilst the old house of Chamberlain's, of Worcester, now so ably represented by Kerr and Binns, had a position of its own, but the work of none of these was negatived, because Mr. Minton's labours were more distinctly traced out. Mr. Minton's reputation was of too pyramidal a character to need any extraneous aid by detraction from, or neglect of, others. He (Mr. Wallis) could undertake to speak from personal observation of the work Mr. Minton had done in the Staffordshire Potteries at least. It was in 1837, 21 years since, that he first visited that district, and though young in years then, and still younger in his knowledge of art, yet he could not conceal from the manufacturers the disgust and wonder with which he regarded the amount of ugliness they contrived to get into and upon a beautiful material. Nine years after he visited the potteries again. In the interval a great change had taken place, thanks to Mr. Minton and to Mr. Thomas Battam, acting for Copeland's house. Nine years later, in 1855, they all knew what resulted, and he had no hesitation in saying that but for Mr. Minton, the beautiful display of Majolica ware, at least, then before them would have had no existence. He thought it was a most fitting thing for the Society of Arts to have afforded an opportunity for this eulogium on such a man after his death. We had too little of this in England. The only eulogy usually heard was "Well, he is gone, poor fellow! How much money has he left behind him?" as if he could take any of it with him. Something like this had been already said about the subject of the memoir of that evening. It was stated that Mr. Minton had died worth "so much" money, but that the greater portion was invested in moulds and models; as if they were not good property in good hands. He (Mr. Wallis) trusted, however, that the time would never come when some future ultra-utilitarian partner of this now eminent firm might serve them as Wedgwood's models and moulds were served—cast them off the premises at Stoke as old plaster.

Mr. **Blashfield**, having been for many years intimately associated with the late Mr. Herbert Minton in the revival of the ceramic art, would say a few words on the present occasion. In 1839, attempts had been made to introduce improvements in the pavement and decorations of public buildings, and Mr. Minton took out a patent for encaustic tiles, in the production of which his success was so well known. About the same period he (Mr. Blashfield) had the honour of laying down, in the saloon of the chairman's beautiful residence, a Venetian pavement, and he was indebted to that gentleman for some very valuable suggestions on that subject. He (Mr. Blashfield) had had much to do with the revival of coloured pavements; and he at first tried to cut the tiles for that purpose, much in the same way as bakers cut out their biscuits, but all his attempts were unsuccessful. Subsequently his attention had been drawn to some very beautiful buttons, which, he was then informed, were made of clay pressed between steel dies, without any moisture, according to the method invented by Mr. Prosser. It struck him that the same process would be applicable to the making of tiles, and he brought the subject under the notice of Mr. Minton and Mr. Hollins, and learned from them what had been done in the matter. He agreed with Mr. Daniell that the proper amount of credit had hardly been given to Mr. Hollins for the share he had contributed in the advancement of this art. In his communications with that gentleman he was informed that instead of the clay being used dry in Mr. Prosser's process, the moisture was forced out from between the dies. He believed that it was to Mr. Hollins's scientific knowledge, combined with his great industry, they were mainly indebted for the improvements that had been effected in the art of making mosaic and coloured pavements, which emanated from the attempts that were then made to make good encaustic tiles. The public were not aware how much had been done by Mr. Hollins towards perfecting those beautiful specimens which they saw exhibited that evening. Mr. Minton, urged on in some degree by the zeal and energy of Mr. Pugin, had determined to improve the manufacture of encaustic tiles, and he succeeded in bringing the coloured tile to such perfection as to call forth expressions of enthusiastic delight from Mr. Pugin, who exclaimed to Mr. Minton, "You shall have a *brass* for that." Mr. Minton was so determined to revive the manufacture of the ancient tiles and tesseræ that, although dissuaded by Mr. Prosser from making the attempt, he persevered; indeed, had it not been for his determination, the beautiful machine of Mr. Prosser would have been applied solely to the manufacture of buttons. The first piece of this mosaic pavement was laid down by him (Mr. Blashfield) in the London Coffee-house, on Ludgate-hill, in 1841, and afterwards it was applied at the London Bridge Hotel, and in some of the houses of the higher classes. In the following year, the machine of Mr. Prosser was worked in the Society's room, and some of the pavement made by it was put together according to some drawings made by Mr. Owen Jones. In 1843, the then largest specimens of mosaic pavement were exhibited at the soirée of the Marquis of Northampton, and the Prince Consort, being much pleased with them, requested to be supplied with a particular account of the process employed; a report upon the subject was drawn up by Mr. Prosser, and transmitted to Buckingham Palace. The introduction of that material for paving, and the attention it had attracted in high quarters, led to a demand for it, which could not be met, as Mr. Prosser was not at that time able to supply a sufficient number of machines. In 1845-6 the same description of pavement was laid down in York Minster; indeed, all must acknowledge that Mr. Minton had done very much more for the revival of the mosaic pavement than anyone else.

Mr. **B. Waterhouse Hawkins** did not rise for the purpose of adding anything to the eulogium that had been passed upon the late Mr. Minton, but he wished to congratulate the Society upon the very graceful manner in which that most legitimate function had been discharged by Mr. Digby Wyatt on the present occasion. To know the late Mr. Herbert Minton was to love him. His works were before them, and it was impossible for any words to add to the appreciation of their beauty, or of the indomitable energy which led to their production. If Mr. Digby Wyatt had omitted anything it might be that he had not had time to speak of that great faith and confidence which Mr. Minton so pre-eminently possessed in works in which he detected the true spirit of art, which art he fostered and carried to a point which had not only raised his own reputation, but that of the country in which he lived.

Professor **Tennant** had had the privilege of a thirty-five years' acquaintance with the late Mr. Herbert Minton. As an illustration of the perfection to which Mr. Minton carried his productions, he might mention that having been struck with the beauty of some designs he saw at Frankfort, he secured them, and on placing them before Mr. Minton, he found that they were his own work—the earliest specimens of them having been sent to Frankfort, where he (Professor Tennant) was first attracted by them. He joined his testimony to that which had been already given as to Mr. Minton's readiness to impart the fullest information with regard to his manufactures to all who were desirous of obtaining it.

The **Chairman** said he believed the hour had arrived when it would be acceptable to the meeting that this discussion should be closed. He certainly thought that they had been very fortunate in hearing the paper read on this occasion, but he likewise thought it fortunate for the memory of the late Mr. Minton that the subject had fallen into the hands of the gentleman who had addressed them that evening. It was undoubtedly the case in England that a man who, in works of this description, deserved well of his country, and conduced to its prosperity, could only look to some appreciation of this kind at the hands of his fellow-countrymen. He would not receive public rewards—he might not look for public distinction. Those things were reserved for feats of arms and success in warfare, for social position and high distinction in the political world. They were not bestowed upon men who advanced arts, who promoted science, and who deserved well of their country, in this perhaps more humble, but not less useful walk. Under these circumstances it was fortunate when a gentleman so well able to do justice to the subject as Mr. Digby Wyatt, took it up. They might say, in the words of Horace:—

> "Vixere fortes ante Agamemnona
> Multi; sed ommes illacrymabiles
> Urgentur ignotique longa
> Nocte, carent quia vate sacro."

They had the *Agamemnon*, and also the poet in this case, and they would best show their gratitude by returning to Mr. Digby Wyatt their sincere and heartfelt thanks for the very admirable manner in which he had treated this subject.

The vote of thanks having been passed,

Mr. DIGBY WYATT acknowledged the kind manner in which the thanks of the meeting had been conveyed to him, and explained the circumstances which had led to his having been asked to read this paper. The task was to him a labour of love, and to enable him to accomplish it successfully, he had been furnished with much useful information by the surviving partners in Mr. Minton's firm. With respect to the mention of other manufacturers, in giving to the late Mr. Minton the prominent place he had afforded him, he (Mr. Wyatt) had only followed the awards of the juries of the Exhibitions of 1851 and 1855, and he would remind the members that the object of his paper was not to trace the progress of ceramic manufacture, but to point out the influence which had been exercised upon it by the late Mr. Minton, one of his oldest and dearest friends.

The paper was illustrated by numerous designs for pavements, and specimens of porcelain, Majolica, Parian, and tiles of various kinds, manufactured by Messrs. Minton and Co., and kindly contributed by that firm, as well as by Messrs. W. P. and G. Phillips (Chamberlain and Co.), and the Department of Science and Art. To all these contributors the thanks of the Society are specially due.

The Secretary announced that this was the last Ordinary Meeting of the Session, and that the Annual General Meeting of the Society would, in accordance with the bye-laws, be held on Wednesday, the 30th of June, at 4 P.M.

Home Correspondence.

MR. HYDE CLARKE'S PAPER ON INDIA.

SIR,—Mr. Hyde Clarke, in his paper " On the English Settlements of the Hill Regions of India," read to the Society of Arts last evening, referred to myself and some other persons to make some observations to the meeting, but these we were precluded from offering before the time for closing the discussion had arrived.

An allusion was made to the paper " On the Revenue and Taxation of India," which I had read to the Statistical Society on the previous evening, and to the section of it bearing upon the question of land-tax redemption. Upon this I should have wished to explain to the Society of Arts that, as I do not agree in considering the principles of the modern and recent British legislation of Indian land revenue as either impolitic, oppressive, or unjust, I had come to the conclusion (expressed in full detail in the paper referred to) that, upon the most mature consideration, it appeared to me that the extension of too wide a generalisation of a redemption of the land-tax would be wrong, but that, if the field of its operation were distinctly restricted to Bengal alone, or rather to those portions of the Bengal Presidency where the permanent settlement is an existing institution, and cannot be reversed without such a breach of faith as we refuse, as Englishmen, even to entertain, there would in such case be no valid objection to a land-tax redemption being effectually carried out in that part of the country.

I was glad to hear, from the observations made by Mr. Theobald, that he was distinctly under the impression, arrived at from local and personal knowledge of Bengal, that the native or English purchaser of land found no difficulty from the incidence of the land-tax. This is a further reason in support of the entire practicability and utility of a measure of land-tax redemption, upon the British model, being extended to Bengal.

I am indisposed to agree in the advisability of any scheme which, at the present time, would radically alter the existing relations between the British Government and the rental of land in India. A permanent settlement is virtually essential in any plan of land-tax redemption; and to extend such a settlement further than was accomplished by the Cornwallis legislation of 1793, would be an injudicious renunciation of all power on the part of the State, as chief landlord, to derive advantage from the growing wealth of the country. The British Government has in India largely bettered the condition of the payers of land-tax, not only in the liberal reductions of assessment, but also in the exemption of improvements from the immediate incidence of the impost. And it is not called upon to make further sacrifices without full compensation in the shape of a property and income tax—a tax which is directly consistent with the principles and practice of the ancient Hindoo and Mahomedan laws, but which has recntly been entirely abrogated in British India.

I also wished to have observed that in the figures of comparative taxation in India and in Great Britain (which Mr. Hyde Clarke referred to as having been submitted by me to the Statistical Society), viz., one shilling per head of the Indian population against fifty shillings per head of the British population, I did not attempt any analysis of the extremely complicated question whether, on the average, this comparatively low rate of taxation is, or is not, easier borne in India than in England? The statistical information regarding the different countries of India and the social and physical condition of its people and soil, is not sufficiently complete to warrant a very decided induction in answer to such a question.

My object in referring to this comparison was to present, for the consideration of the Statistical Society, a correction (on grounds which I fully explained) of the Parliamentary statistics of the incidence or pressure of taxation, which were recently published, and represented the ratio of proportionate taxation per head, in parts of India, by figures which, compared with those of the United Kingdom, would be as about nine or ten to one.

Without entering upon the general question, I must, however, request permission to observe that I do not agree with Mr. Hyde Clarke in the proposition that because the common labourer earns (as he states) only two shillings, or one rupee, a month, it necessarily followed that the taxation upon him is severely felt. There are mitigating circumstances of which he has the advantage, viz., the low price of the necessaries of life, the absence of any oppressive fiscal exaction under British rule, and the bounty of the Almighty in giving him the great benefit of independence in respect of lodging, clothing, and fuel, the provision of all of which is so daily and pressing a care upon the European.

I am disposed also to question if two shillings per month is the normal rate of remuneration for unskilled labour in India. In the returns made to the House of Lords in 1853, it was shown that the hire of Coolies and common labourers in many localities was three rupees, or six shillings per month, without provisions, or one rupee, say two shillings per month, with daily allowance of food, and with clothing when required.

The rate of labour-hire does not include the whole question. What is most wanting in India is the example of active industry in the promotion of works of public and private utility, and the continuous employment of labour in a manner beneficial to its people and to ourselves. Any preservation of the dead level of the existing state of things is sincerely to be deprecated. It admits of statistical proof that the exhaustion of resources in unproductive ways has for ages upon ages been the bane of India. And it is indubitably within the power and the means of British administration to show that this can be reversed; and that a country which, with all the material of wealth, is, generally speaking eminently poor, can be made rich in every sense of the word.

The wonderfully slow general advance, either in prices or in rates of labour, which has occurred in India during the last three centuries, affords some ground for anticipating that any rapid or large advance in these important respects throughout the length and breadth of India is not to be expected. The demand for labour falls on so immense a surface (837,000 square miles), and on so vast a population (132,000,000 of souls), that it is easily and temporarily affected in particular localities without modifying the terms of the general market price.

With due deference to Mr. Hyde Clarke's judgment in this particular, I am hardly inclined to think that the increase in wages is in all respects so desirable to look forward to. If wages are too elevated, the cultivation of cotton and other raw products, to be exported in competition with America and other countries, would soon break down. It appears to me that it would be more desirable to look forward, in the first instance, in India, to a further lowering of the price of food, and of all the necessaries and luxuries of life which a native population is suited to enjoy, and, at the same time, to carrying on the construction and improvement of the great channels and means of land and water transit, so as to mobilize labour and food, to bring out the capabilities of the people and country, and to prevent (as far as is consistent with human foresight) those famines which have hitherto decimated the people of India in almost periodical cycles of time.

In conclusion, I beg to express the extreme gratification I had in listening to the able, lucid, and most interesting arguments contained in Mr. Hyde Clarke's important and practical paper, and which, I am sure, will do credit to the transactions of the Society of Arts. I am, &c.,

FREDERICK HENDRIKS.

Kildare terrace, W., 20th May, 1858.

Proceedings of Institutions.

GREAT WESTERN RAILWAY LITERARY SOCIETY (LONDON).—The annual meeting of the members was held in the Reading-room, Paddington Terminus, on Monday, 26th April. The secretary's report was highly satisfactory, showing a continued increase in the number of members. The library circulation amounted to about 10,000 volumes, being an increase of 3,000 over the preceding year. Nearly 70 per cent. of these consisted of works on philosophy, history, biography, physical science, &c. The treasurer's report showed that, after a liberal expenditure for books and all other necessary requirements of the Society, a considerable balance remained in hand. During the past year Sir Watkin Williams Wynn, Bart., has presented the Society with the sum of £60, which has been expended in the purchase of standard works. A most valuable addition to the library has been made by J. H. Bertram, Esq., who has presented the whole of "Blackwood's Magazine" from its commencement. The cordial thanks of the members were accorded to these gentlemen, to the directors of the company, and to the proprietors of the London and country press, for their valuable assistance; and the success attendant upon the efforts of the officers of the Society called forth warm expressions of the members' appreciation of their exertions.

GREENWICH.—On Tuesday evening, the 27th April, owing to the sudden indisposition of Archdeacon Robinson, of the Temple, who was announced to lecture before the members of the Society for the Diffusion of Useful Knowledge, on the "Distinctive Character of Hebrew Poetry," Mr. W. C. Bennett accepted an invitation to take his place, the subject chosen for the occasion being "Songs and Song Writers." The lecture was highly appreciated by the audience.

SIDMOUTH.—The Annual General Meeting of the Institution was held on the 9th ult., J. G. G. Radford, Esq., in the chair. The Report congratulated the members on the approved convenience of their present premises, and the wise economy of previous years, which, aided by some liberal donations, had enabled them to meet the expenses connected with the change without incurring debt, or encroaching on the income of the year. Notwithstanding a decrease (attributable to various causes) in the number of annual subscribers, the statement of receipts and expenditure showed a balance in favour of the Institution of nearly £10 on the year. The Committee would be glad to devote some part of this surplus to the improvement of the circulating library, which they regard as the principal means of extending the benefits of the Institution to the homes of the less wealthy subscribers. In the late Mr. Henry Johnson the Institution had lost not only an early and generous friend, but a zealous and efficient treasurer. So long as there was any chance of his resuming this office the Committee were reluctant to appoint any other in his place; this duty would now devolve upon the meeting. The views taken by Mr. Johnson in Italy formed the nucleus of the collection of photographs which had recently been exhibited to the public. The Committee wished it to be generally understood that their object was not to add to the funds of the Institution, but to gratify the taste and contribute to the pleasure of all their fellow-townsmen. After the reading of the Report, the election of officers took place, and the meeting separated after passing several votes of thanks.

MEETINGS FOR THE ENSUING WEEK.

MON. ......British Architects, 8. I. Rev. R. Burgess, "On the Egyptian Obelisks in Rome, and Monoliths as Ornaments of Great Cities." II. Mr. J. Bell, "On the Application of the Entasis to the Obelisk."
United Service Inst., 8½.
TUES.......Royal Inst., 3. Mr. J. P. Lacaita, "On the History of Italy during the Middle Ages."
Photographic, 8.
THURS. ...Zoological, 3.
Antiquaries, 8.
Linnæan, 8.
Chemical, 8. I. Mr. Kynaston, "On the Composition and Analysis of Block Ash or Ball Soda." II. Mr. Guthrie, "On Nitrate of Amyl and its derivatives."
Philological, 8.
FRI..........United Service Inst., 3. Mr. Montagu Gore, "On the Military Character of Sir John Moore."
Archæological Inst., 4.
Royal Inst., 8½. Prof. Tyndall, "On the Mer de Glace."
SAT..........Asiatic, 2.
Actuaries, 3. Anniversary.
Royal Inst., 3. Dr. Lankester, "On the Vegetable Kingdom in its relations to the life of man."

PARLIAMENTARY REPORTS.

PRINTED SESSIONAL PAPERS.

Parl. No.

Delivered on 12th May, 1858.

235. Sugar—Return.
236. Foreign Sugar—Account.
245. County Courts—Return.
262. Harbours of Refuge—Return.
263. Treasury Chest—Account.
368. Ecclesiastical Commission—Return.

Delivered on 13th May, 1858.

79. Bills—Chelsea Bridge Act Amendment.
80. ——— Stanhope and Walsingham Rectories.
82. ——— Election Committees Scrutiny.
Constantinople and Bassorah (Line of Telegraph). Correspondence.

Delivered on 14th May, 1858.

83. Bill—Stamp Duty on Passports.

Delivered on 15*th and* 17*th May*, 1858.

189. Bankruptcy—Returns.
272. East India Company—Return.
201. (11) East India (Revenues, &c.)—Return of Amount of Government Stock in India, &c.
260. Shipping—Returns.
278. East India (Governor-General)—Copy of a Letter.
81. Bills—Prescription (Ireland) (No. 2).
84. ——— Prince Edward's Island Loan.
85. ——— Common Law Procedure Act Amendment.
The Excavations at Budrum—Further Papers.
Superannuation Act—Supplemental Report of the Commissioners.

Delivered on 18*th May*, 1858.

149 (1). Metropolis Rates—Return.
253. East India (Press)—Return.
271. Cooper *v*. Slade—Opinions delivered by the Judges.
72. Bills—Confirmation of Executors, &c.
86. ——— London Corporation (as Amended by the Select Committee).
87. Bills—Chancery Amendment (as Amended in Committee, on Re-commitment, and on Consideration of Bill as Amended).

Delivered on 19*th and* 20*th May*, 1858.

266. Exchequer—Account.
280. Beer—Account.
281. Income Tax—Return.
282. East India (Governor-General)—Return.
Public General Acts—Cap. 10, 11, 12, 13, 14, 15, and 16.

Delivered on 21*st May*, 1858.

118. Local Acts (35. Hesketh Marsh)—Admiralty Report.
274. War Department—Returns.
277. Prideaux Furnace Valve Door—Report by Mr. Murray.
286. Guaranteed Loans (Colonies)—Return.
261. Colonization and Settlement (India,—1st Report from Committee.
289. East India (Oude Proclamation)—Copy of Letters.
90. Bills—Game Laws (Ireland).
91. ——— Poor Removal Law Amendment.
92. ——— Friendly Societies Act Amendment.
93. ——— Hainault Forest (Allotment of Commons) (as amended by the Select Committee).

PATENT LAW AMENDMENT ACT.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

[*From Gazette, May* 21, 1858.]

Dated 22*nd April*, 1858.

880. W. Bishop, Boston, Lincolnshire—Imp. in machinery or apparatus for ticketing or labelling spools, bobbins, or reels, for adjusting the size thereof for sampling patterns, for printing labels or tickets, affixing postage or other stamps or labels, for cutting their edges, and dividing them into given quantities and sizes.
883. J. Chatterton, 7, Devonshire-street Islington—Imp. in combining and coating insulated metal conductors for electric telegraphs.

Dated 26*th April*, 1858.

918. W. A. Martin, 16, Powis-street, Woolwich—An improved shoe scraper.

Dated 28*th April*, 1858.

948. L. Tapié, Bordeaux (France)—Imp. in ship building.

Dated 3*rd May*, 1858.

981. J. A. Hartmann, Mulhouse, France—Imp. in preparing and combining colours for printing cotton cloth.
983. S. Etchells and A. Consterdine, Nottingham, and S. Cattell, Radford—A reversing water tube iron to work with single blast or double blast as occasion may require, and an arrangement of water tube irons and parts connected therewith.
985. J. Taylor, Roupell park, Streatham-hill, Surrey—Imp. in stoves and fireplaces.

Dated 4*th May*, 1888.

989. J. Swain, Hyde, and M. Swain, Dukinfield, Chester—Certain imp. in metallic pistons.
991. H. L. Meall, 3, St. Matthew's-place, Hackney-road—Imp. in spring fastenings suitable to be used for dresses, brooches, and other purposes.

Dated 8*th May*, 1858.

993. D. Thom and G. Phillips, Pendleton, Lancashire—Imp. in apparatus for bleaching and raising oil and fat.
995. W. Ross, Glasgow—Imp. in taps or valves.
997. J. H. Johnson, 47, Lincoln's-inn-fields—Imp. in signal and indicating apparatus for railways. (A com.)
999. W. S. Hollands, 5, Anchor-terrace, Mawbey-road, Old Kent-road—Imp. in extracting and purifying oils and fatty matters.
1001. T. Holstead, Carlisle—Imp. in machinery for the manufacture of certain articles of confectionary, which improvements are also applicable to the manufacture of biscuits and the like, and to other articles, from plastic substances.

Dated 6*th May*, 1858.

1003. J. Richards, Moorgate-street—Imp. in rotary pumps.
1005. J. S. Willway, Bristol—An improved arrangement of apparatuses for ringing bells.
1007. W. Heap, Oldham road Tool Works, Ashton-under-Lyne—Imp. in pipe joints or couplings.
1009. H. Ashworth, Prestwich, Lancashire—Certain imp. in machinery or apparatus for cutting hides or skins.
1011. J. Bridgman, Hamburgh—Imp. in cooling fluids, and in the application of cold.
1013. W. E. Newton, 66, Chancery-lane—Imp. in the manufacture of saltpetre. (A com.)
1015. J. Wright, 10, Alfred-place, Newington Causeway, Southwark—Imp. in treating madder for printing and dying, and also in the substances and processes used in printing and dying with the same. (A com.)
1017. W. Willis, W. Langford, and J. Slack, Nottingham—Imp. in pressure guages.

Dated 7*th May*, 1858.

1019. C. J. Carr, Wentworth, Yorkshire—Imp. in forge and other hammers.
1021. R. Openshaw, Firwood, near Bolton-le-Moors, Lancashire—Imp. in machinery for plating down or folding and measuring fabrics.
1023. J. M. Duvard, Luc sur Mer, Calvados, France—An improved bed-room vase.
1025. A. Neilson, Glasgow—Imp. in the manufacture of boots, shoes, and other coverings for the feet.
1027. G. B. Coggan, 108, Friar-gate, Derby—A new portable apparatus to be called a stereoscopia, for exhibiting stereoscopic pictures.
1029. R. Best Birmingham—An imp. or imps. in illumination.
1031. D. Stothard, Lambeth, J. Jones, Southwark, and D. Jonas and B. W. Jonas, Spitalfields—An improved ships' block.

WEEKLY LIST OF PATENTS SEALED.

May 21*st*.

2922. W. A. Cooper.
2929. S. Riley.
2932. C. Barlow.
2934. D. Hulett.
2939. W. Searby.
2940. C. Sands.
2944. F. H. Maberly.
2958. S. B. Wright and H. T. Green.
2970. J. Nichols.
2976. D. K. Clark.
2982. J. Young.
3018. W. Mercer, W. Bodden, and W. Higginson.
3032. G. Holcroft and G. Denholm.
3132. G. T. Bousfield.
3160. G. W. Hart.
3176. J. T. Griffiths.
3184. J. Blake and R. D. Kay.
158. W. T. Fox.
269. G. W. Burton.
362. J. Henderson.
372. A. Applegath.
404. W. E. Newton.
478. F. C. Warlich.
516. A. V. Newton.
560. A. V. Newton.

May 25*th*.

2954. J. Ruston and J. T. Proctor.
2955. J. Higham and G. D. Bellamy.
2961. A. Vandeleur.
2964. A. A. Chassepot.
2971. H. Deacon.
2975. R. A. Brooman.
3001. E. Slack.
3005. J. Buchanan.
3083. W. Galloway and J. Galloway.
3191. A. V. Newton.
183. J. Haste.
357. W. E. Newton.
548. W. Ward.
605. W. E. Wiley.
655. W. A. Gilbee.
657. W. A. Gilbee.
675. B. Wood.

PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

May 18*th*.

1139. I. J. Silbermann, junr.
1153. G. Collier.
1157. J. J. Meyer.

May 19*th*.

1127. W. H. Tucker.
1161. D. L. Davis.
1224. J. B. Acklin.

May 20*th*.

1126. R. J. Stainton and E. C. Davey.
1131. P. F. Didot.
1140. A. F. Cossus.
1147. J. Shanks.
1148. J. H. Johnson.

May 21*st*.

1315. J. S. Nettlefold, E. J. Nettlefold, and J. H. Nettlefold.

May 22*nd*.

1156. J. Morgan.
1167. J. A. Longridge.
1170. J. Park.
1185. J. H. Poullain.
1195. W. S. Young.
1199. C. W. Harrison.
1454. A. E. L. Bellford.

WEEKLY LIST OF DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

No. in the Register.	Date of Registration.	Title.	Proprietors' Name.	Address.
4090	May 21.	Portmanteau Trunk or Box	N. McCann	378, Euston-road.
4091	„ 22.	Deep Well Pump	T. G. Messenger	Loughborough.
4092	„ 25.	The Multum in Parvo Bath	J. Oxley	Camden-town.